BUREAU OF ENVIRONMENTAL REMEDIATION/REMEDIAL SECTION GUIDELINE

SCOPE OF WORK FOR A REMEDIAL INVESTIGATION(RI)/FEASIBILITY STUDY (FS)

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GENERAL:

All work conducted under a Remedial Investigation/Feasibility Study (RI/FS) Consent Agreement shall be consistent with § 300.430 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR 300 (final rule promulgated 3/8/90), as provided by relevant portions of §§ 101-121 of the Comprehensive Environmental Response, Compensation and Liability Act as amended by the Superfund Amendments and Reauthorization Act of 1986. All work performed pursuant to an RI/FS Consent Agreement shall also follow all pertinent EPA and KDHE RI/FS guidance. The general activities for an RI/FS that Respondent(s) are required to perform are identified by this RI/FS Scope of Work. All work performed pursuant to an RI/FS Consent Agreement shall follow the Implementation Schedule as included in the KDHE-approved Work Plan. All work performed pursuant to an RI/FS Consent Agreement shall follow all procedures and complete all activities as proposed in the final KDHE-approved RI/FS Work Plan.

SCOPING:

The Respondent shall meet with KDHE as necessary to address the scope of RI/FS activities. The RI/FS scoping should consider the following items: 1) assembling and evaluation of the existing data for the site, including the results of any prior investigations or activities (removals, pertinent site assessments or other investigations); 2) develop a conceptual understanding of the site based on the information described in the above item; 3) identify likely response scenarios and potentially applicable technologies and operable units/source control opportunities that may address site problems; 4) undertake limited data collection efforts or studies (if necessary or appropriate) to assist in scoping RI/FS response actions, and to identify the initial need for treatability studies as needed or appropriate; 5) identify the type, quality, and quantity of data that will be collected during the RI/FS to support decisions regarding remedial response activities; 6) identify relevant deliverables for the RI/FS process; and 7) to initiate the identification of potential applicable or relevant and appropriate requirements (ARARs) for actions at the site. Discussion regarding the initiation of community relation activities may also be appropriate as determined by the KDHE Project Manager. Information gathered during these meetings will assist in the development of an RI/FS Work Plan.

PURPOSE OF RI:

The purpose of the **Remedial Investigation (RI)** is to collect data necessary to adequately characterize the site for the purpose of developing and evaluating remedial alternatives. Field investigations should be conducted as necessary to provide sufficient data to characterize the site and to assess the risks to human health and the environment as well as support the development, evaluation, and selection of appropriate response alternatives. Site characterization may be conducted in one or more phases to focus sampling efforts and increase the efficiency of the RI. The primary objectives of the **RI** are described as follows:

1) All significant operable units/source areas must be adequately characterized in order to determine appropriate remedial goals (i.e. type and nature of source(s) of contaminants, cause or mechanism of release, estimated quantity of release(s), and if the release(s) is/are active or inactive). Site characterization activities should be fully integrated with the development and evaluation of alternatives in the Feasibility Study (FS). The contribution of the source/operable unit to the general site contamination should be evaluated in the RI/FS.

2) The nature, threat and extent (vertical and horizontal) posed by the hazardous substances and hazardous materials present at the site must be characterized (including the migration mechanisms) for the purpose of and to the extent necessary for developing and evaluating effective remedial alternatives. The chemical and physical properties of the contaminants, their mobility and persistence in the environment and their important fate and transport mechanisms should be characterized during the RI. Any human and environmental targets that may be affected by contamination must be identified.

5) All data necessary to assess the extent to which releases of hazardous substances at the site pose a threat to human health and the environment must be gathered during the RI. A risk assessment of contaminant impacts on identified target areas must be completed consistent with EPA and KDHE guidance and policy.

6) Data supporting the analysis (and design, if appropriate) of potential response actions should be gathered during the RI. Individual source control/interim remedial measures plans for identified "hot spots" or source areas of significant contamination should be developed where appropriate. Bench- or pilot-scale treatability studies shall be conducted, when appropriate and practicable, to provide additional data for the detailed analysis of remedial alternatives in the FS and to support engineering design of remedial alternatives.

PURPOSE OF THE FS:

The purpose of the **Feasibility Study (FS)** is to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to allow the selection of the appropriate remedy(ies) by KDHE. The primary objectives of the **FS** are described as follows:

1) To identify and evaluate all appropriate remedial alternatives based on site characterization information obtained during the RI. Remedial action objectives (utilizing results of site-specific risk assessments performed during the RI) and all applicable or relevant and appropriate requirements (ARARs) should be determined in the FS (if not previously determined in the RI). The number of alternatives to be reviewed is highly site-specific and should be determined by the KDHE Project Manager in consultation with Respondent(s).

2) To screen and assemble appropriate technologies into remedial action alternatives. Alternatives shall be developed that protect human health and the environment and meet remedial action objectives for the site.

3) To evaluate and refine alternatives based on the nine criteria as described in 40 CFR § 300.430 (e)(9)(iii) of the NCP. Relevant EPA guidance documents should also be utilized in developing and evaluating remedial alternatives.

4) To conduct treatability studies or pilot tests as necessary and appropriate to support the effectiveness of certain alternatives.

5) To recommend the most feasible and effective remedial action for the site based on the nine criteria for evaluating remedial alternatives enumerated in 40 CFR § 300.430(e)(9)(iii) of the NCP.

RI/FS WORK PLAN:

As provided in the Consent Agreement, Respondents shall submit for review and final approval a revised RI/FS Work Plan. The final RI/FS Work Plan shall address KDHE's comments received from prior reviews. Respondent shall implement the RI/FS according to the implementation schedule contained in the final KDHE-approved RI/FS Work Plan. A site Sampling and Analysis Plan, which consists of a Field Sampling Plan (FSP) and a Quality Assurance Project Plan (QAPP), should be submitted with a site-specific Health and Safety Plan (HASP) in the Work Plan.

IMPLEMENTATION:

Within 30 days from the date of KDHE approval of the FSP, QAPP, and HASP, Respondents shall commence the schedule of work and implement the tasks detailed in the RI/FS Work Plan according to the KDHE-approved schedule. All work performed shall be consistent with activities and procedures proposed in the KDHE-approved Work Plan.

DELIVERABLES:

The general activities and subsequent deliverables that the Respondent(s) are required to complete are specified in 40 CFR § 300.430 of the NCP and are explained in the USEPA document titled, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA".

The Implementation Schedule (contained in the Approved Work Plan should indicate all dates of deliverable submissions, field work schedule, review schedules, etc.

RI REPORT:

Following completion of all field activities the RI Report must be prepared, which includes all data collected from the field activities. The RI Report shall follow appropriate EPA guidance documents, and shall describe in detail the RI work completed. Deviations from the KDHE-approved Work Plan should be discussed. KDHE will review the draft RI and submit comments as deemed appropriate by the Project Manager. Upon satisfactory revision of any draft(s) RI Reports, KDHE will approve the Final RI Report. Upon KDHE approval of the final RI Report, Respondent shall commence FS activities consistent with the KDHE-approved RI/FS Work Plan and implementation schedule.

BASELINE RISK ASSESSMENT:

A quantitative Baseline Risk Assessment (BRA) should be completed during the RI (or FS upon mutual agreement between Respondents) according to pertinent EPA and KDHE guidance and policy. If Respondent(s) elect to prepare the BRA, KDHE will review and approve the BRA. If KDHE prepares the BRA, Respondent will be allowed to review and comment prior to finalization by KDHE.

FS REPORT:

Respondents shall submit an FS Report, which evaluates appropriate remedial alternatives as determined from information gathered during the RI. The FS Report shall evaluate appropriate remedial alternatives based upon the criteria defined in the NCP and EPA guidance documents. A detailed analysis of the selected remedial alternative shall also be provided. The no-action alternative must also be considered in the initial evaluations. As with the RI, KDHE will review draft FS Report submittals, and upon satisfactory resolution of KDHE comments, KDHE will approve the Final FS Report.

COMMUNITY RELATIONS:

KDHE shall prepare a Community Relations Plan (CRP), in accordance with EPA guidance and consistent with 40 CFR § 300.430(c) of the NCP. KDHE shall allow review of the CRP by Respondent(s) prior to final approval. KDHE and the Respondent(s) shall jointly implement the approved plan. The CRP must be approved by KDHE prior to implementation of on-site field activities.

CORRECTIVE ACTION DECISION (CAD)

After approval of the final FS Report, KDHE shall prepare a draft Corrective Action Decision (CAD) stating the preferred proposed remedial alternative as concluded from the RI/FS study. The draft CAD shall support the selection of the preferred remedial alternative(s) by documenting

the following: 1) how the remedy was selected; 2) how the remedy eliminates, reduces, or controls exposures to human and environmental receptors through reduction of mobility, toxicity or volume of site contaminants; 3) how the remedy meets federal, state and local remedial requirements, ARARs and remedial action objectives; and 4) discussion of remediation goals.

KDHE shall publish a notice of the availability of the draft CAD and provide a public comment period of 30 calendar days. The notice shall include an agency contact person and address, for the submission of written and oral comments on the draft CAD. As provided in 40 CFR § 300.430(f)(3)(i) of the NCP, the administrative record for the site should also be available for public comment and review at an appropriate accessible public location (library, KDHE office, etc.) during the 30-day public comment period. A public meeting may be held during the public comment period at or near the site regarding the proposed preferred remedial alternative. A transcript of the meeting shall be prepared for the administrative record.

A final CAD shall be prepared by KDHE that includes KDHE's explanation for any significant differences between the draft CAD and the final CAD as well as a responsiveness summary to the public comments.